

SEQUENCE LISTING

<110> KYOWA HAKKO KOGYO CO., LTD.,

<120> NOVEL POLYPEPTIDE

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<140> US 09/856,617

<141> 2001-05-24

<150> H10-332484

<151> 1998-11-24

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gtt	cgt	gaa	cac	gtg	cgc	aat	gat	gac	ggg	agg	ctg	cag	gcc	tgt	ggg	2035	
Val	Arg	Glu	His	Val	Arg	Asn	Asp	Asp	Gly	Arg	Leu	Gln	Ala	Cys	Gly		
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tgg	agc	ctg	cct	gcc	aag	tac	aag	cag	ctg	agc	ccc	aat	gga	ggc	cag	2083	
Trp	Ser	Leu	Pro	Ala	Lys	Tyr	Lys	Gln	Leu	Ser	Pro	Asn	Gly	Gly	Gln		
	645					650					655						
gaa	gac	acc	cgg	atg	aaa	aat	gtg	cct	gtc	cct	gtg	tac	tgt	cgc	cct	2131	
Glu	Asp	Thr	Arg	Met	Lys	Asn	Val	Pro	Val	Pro	Val	Tyr	Cys	Arg	Pro		
660					665				670						675		
ctg	gtg	gag	aag	gac	cct	tgc	aca	aag	ctg	tgg	tgt	gct	gct	ggg	gtc	2179	
Leu	Val	Glu	Lys	Asp	Pro	Ser	Thr	Lys	Leu	Trp	Cys	Ala	Ala	Gly	Val		
				680					685					690			
aac	ctg	agt	ggg	tgg	aag	cca	cat	gaa	gag	gac	tct	agc	aat	gga	ccc	2227	
Asn	Leu	Ser	Gly	Trp	Lys	Pro	His	Glu	Glu	Asp	Ser	Ser	Asn	Gly	Pro		
			695					700					705				
aag	cct	gta	cca	ggg	cga	gac	cct	ctg	acc	tgt	gac	cgg	gaa	gga	gaa	2275	
Lys	Pro	Val	Pro	Gly	Arg	Asp	Pro	Leu	Thr	Cys	Asp	Arg	Glu	Gly	Glu		
		710					715					720					
ggc	gaa	ccc	aag	agc	aca	cac	cca	tca	cct	gag	aag	aag	aag	gca	aag	2323	
Gly	Glu	Pro	Lys	Ser	Thr	His	Pro	Ser	Pro	Glu	Lys	Lys	Lys	Ala	Lys		
	725					730					735						
gaa	acc	cct	gag	gca	gat	gct	acc	tcc	agt	cgg	gta	tgg	atc	ctc	acc	2371	
Glu	Thr	Pro	Glu	Ala	Asp	Ala	Thr	Ser	Ser	Arg	Val	Trp	Ile	Leu	Thr		
740					745					750					755		
agc	acc	ctg	aca	acc	agc	aag	gtg	gtg	atc	att	gat	gcc	aac	cag	cca	2419	
Ser	Thr	Leu	Thr	Thr	Ser	Lys	Val	Val	Ile	Ile	Asp	Ala	Asn	Gln	Pro		
				760					765					770			
ggc	aca	att	gtg	gat	cag	ttc	aca	gtc	tgc	aat	gcc	cac	gtc	ctg	tgt	2467	
Gly	Thr	Ile	Val	Asp	Gln	Phe	Thr	Val	Cys	Asn	Ala	His	Val	Leu	Cys		
			775					780					785				
atc	tcc	agc	att	cct	gcg	gcc	agt	gac	agt	gac	tat	ccc	cct	ggg	gag	2515	
Ile	Ser	Ser	Ile	Pro	Ala	Ala	Ser	Asp	Ser	Asp	Tyr	Pro	Pro	Gly	Glu		
		790					795					800					
atg	ttc	cta	gac	agt	gat	gtg	aac	cct	gaa	gat	tca	ggg	gct	gat	ggg	2563	
Met	Phe	Leu	Asp	Ser	Asp	Val	Asn	Pro	Glu	Asp	Ser	Gly	Ala	Asp	Gly		
	805					810					815						
gtg	ctg	gct	ggc	atc	acc	ctg	gtg	ggg	tgt	gct	acc	cgc	tgc	aat	gtt	2611	
Val	Leu	Ala	Gly	Ile	Thr	Leu	Val	Gly	Cys	Ala	Thr	Arg	Cys	Asn	Val		
820					825					830					835		
cca	cgt	agc	aac	tgt	tcc	tca	cga	gga	gac	acc	cca	gta	ctg	gac	aag	2659	
Pro	Arg	Ser	Asn	Cys	Ser	Ser	Arg	Gly	Asp	Thr	Pro	Val	Leu	Asp	Lys		
			840						845					850			
ggg	cag	ggg	gat	gtg	gcg	acc	act	gcc	aat	ggg	aag	gtc	aac	ccg	tcc	2707	

Gly	Gln	Gly	Asp	Val	Ala	Thr	Thr	Ala	Asn	Gly	Lys	Val	Asn	Pro	Ser		
			855					860					865				
caa	tcc	aca	gaa	gaa	gcc	aca	gaa	gcc	aca	gag	gtg	cca	gac	cct	ggt	2755	
Gln	Ser	Thr	Glu	Glu	Ala	Thr	Glu	Ala	Thr	Glu	Val	Pro	Asp	Pro	Gly		
		870					875					880					
ccc	agc	gag	tca	gaa	gca	acg	aca	gtc	cgg	ccc	ggg	cct	ctc	aca	gag	2803	
Pro	Ser	Glu	Ser	Glu	Ala	Thr	Thr	Val	Arg	Pro	Gly	Pro	Leu	Thr	Glu		
	885						890				895						
cat	gtc	ttt	act	gac	cca	gca	ccc	acc	cca	tcc	tcc	agc	acc	cag	cct	2851	
His	Val	Phe	Thr	Asp	Pro	Ala	Pro	Thr	Pro	Ser	Ser	Ser	Thr	Gln	Pro		
900					905					910					915		
gcc	agt	gag	aat	ggg	tca	gaa	tcc	aat	ggc	acc	att	gta	cag	cct	cag	2899	
Ala	Ser	Glu	Asn	Gly	Ser	Glu	Ser	Asn	Gly	Thr	Ile	Val	Gln	Pro	Gln		
				920					925					930			
gtg	gag	ccc	agt	ggg	gaa	ctc	tca	aca	aca	acc	agt	agc	gct	gca	ccc	2947	
Val	Glu	Pro	Ser	Gly	Glu	Leu	Ser	Thr	Thr	Thr	Ser	Ser	Ala	Ala	Pro		
			935					940					945				
act	atg	tgg	cta	gga	gcc	cag	aat	ggc	tgg	ctc	tat	gtg	cat	tca	gcg	2995	
Thr	Met	Trp	Leu	Gly	Ala	Gln	Asn	Gly	Trp	Leu	Tyr	Val	His	Ser	Ala		
		950					955					960					
gta	gcc	aac	tgg	aag	aag	tgt	ctg	cac	tcc	atc	aag	cta	aaa	gac	tct	3043	
Val	Ala	Asn	Trp	Lys	Lys	Cys	Leu	His	Ser	Ile	Lys	Leu	Lys	Asp	Ser		
	965					970					975						
gtg	ctg	agc	ctg	gtg	cat	gtc	aaa	ggc	cga	gtg	ctg	gta	gct	ctt	gca	3091	
Val	Leu	Ser	Leu	Val	His	Val	Lys	Gly	Arg	Val	Leu	Val	Ala	Leu	Ala		
980					985					990					995		
gat	ggg	acc	ctg	gct	atc	ttc	cat	cgt	gga	gag	gat	ggc	cag	tgg	gac	3139	
Asp	Gly	Thr	Leu	Ala	Ile	Phe	His	Arg	Gly	Glu	Asp	Gly	Gln	Trp	Asp		
			1000					1005					1010				
ctg	agc	aac	tac	cac	cta	atg	gac	ctg	ggc	cac	cca	cac	cac	tcc	atc	3187	
Leu	Ser	Asn	Tyr	His	Leu	Met	Asp	Leu	Gly	His	Pro	His	His	Ser	Ile		
		1015					1020					1025					
cgc	tgc	atg	gct	gtt	gtg	aat	gac	cga	gtt	tgg	tgt	ggc	tac	aag	aac	3235	
Arg	Cys	Met	Ala	Val	Val	Asn	Asp	Arg	Val	Trp	Cys	Gly	Tyr	Lys	Asn		
	1030					1035					1040						
aag	gtg	cat	gtt	atc	cag	ccc	aag	aca	atg	cag	att	gag	aaa	tca	ttt	3283	
Lys	Val	His	Val	Ile	Gln	Pro	Lys	Thr	Met	Gln	Ile	Glu	Lys	Ser	Phe		
	1045				1050					1055							
gat	gcc	cac	cca	agg	cgg	gaa	agc	cag	gta	cgt	cag	ctg	gcc	tgg	atc	3331	
Asp	Ala	His	Pro	Arg	Arg	Glu	Ser	Gln	Val	Arg	Gln	Leu	Ala	Trp	Ile		
1060				1065				1070						1075			
ggt	gat	gga	gtg	tgg	gtc	tct	att	cgc	ttg	gat	tct	acc	ctt	cgg	ctc	3379	
Gly	Asp	Gly	Val	Trp	Val	Ser	Ile	Arg	Leu	Asp	Ser	Thr	Leu	Arg	Leu		
			1080					1085					1090				
tac	cat	gct	cac	acc	cac	cag	cac	ctg	cag	gat	gtg	gac	att	gag	ccc	3427	

Tyr His Ala His Thr His Gln His Leu Gln Asp Val Asp Ile Glu Pro
 1095 1100 1105
 tat gtt agc aag atg cta gga acc ggc aag ctg ggc ttc tcc ttc gtg 3475
 Tyr Val Ser Lys Met Leu Gly Thr Gly Lys Leu Gly Phe Ser Phe Val
 1110 1115 1120
 cgc atc aca gcc tta ctc att gca ggc aac cgt ctg tgg gtg ggc act 3523
 Arg Ile Thr Ala Leu Leu Ile Ala Gly Asn Arg Leu Trp Val Gly Thr
 1125 1130 1135
 ggc aat ggg gtt gtc atc tcc atc ccc ttg act gag act gtg gtc ctg 3571
 Gly Asn Gly Val Val Ile Ser Ile Pro Leu Thr Glu Thr Val Val Leu
 1140 1145 1150 1155
 cat cga ggc cag ctc cta ggg ctc cga gcc aac aag aca tcc cca aca 3619
 His Arg Gly Gln Leu Leu Gly Leu Arg Ala Asn Lys Thr Ser Pro Thr
 1160 1165 1170
 tct ggg gag ggg acc cgc cca ggg ggc atc atc cat gtg tat ggg gac 3667
 Ser Gly Glu Gly Thr Arg Pro Gly Gly Ile Ile His Val Tyr Gly Asp
 1175 1180 1185
 gac agc agt gac aag gcc gcc agt agt ttc atc ccc tac tgc tcc atg 3715
 Asp Ser Ser Asp Lys Ala Ala Ser Ser Phe Ile Pro Tyr Cys Ser Met
 1190 1195 1200
 gca cag gct cag ctt tgc ttc cat ggg cac cgt gat gct gtc aaa ttc 3763
 Ala Gln Ala Gln Leu Cys Phe His Gly His Arg Asp Ala Val Lys Phe
 1205 1210 1215
 ttt gtc tct gtg cca gga aat gtg ctg gcc act ctc aat ggc agt gtg 3811
 Phe Val Ser Val Pro Gly Asn Val Leu Ala Thr Leu Asn Gly Ser Val
 1220 1225 1230 1235
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 Leu Asp Ser Pro Ser Glu Gly Pro Gly Pro Ala Ala Pro Ala Ala Asp
 1240 1245 1250
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 Ala Glu Gly Gln Lys Leu Lys Asn Ala Leu Val Leu Ser Gly Gly Glu
 1255 1260 1265
 ggt tac att gac ttc cgt atc gga gac gga gag gat gat gaa act gag 3955
 Gly Tyr Ile Asp Phe Arg Ile Gly Asp Gly Glu Asp Asp Glu Thr Glu
 1270 1275 1280
 gaa tgt gcc ggg gac gtg aac cag aca aag ccc tcg ttg tcc aag gct 4003
 Glu Cys Ala Gly Asp Val Asn Gln Thr Lys Pro Ser Leu Ser Lys Ala
 1285 1290 1295
 gag cgc agc cac atc atc gtg tgg cag gtg tcc tac acc cct gag 4048
 Glu Arg Ser His Ile Ile Val Trp Gln Val Ser Tyr Thr Pro Glu
 1300 1305 1310
 tgagaccctg tectacctga tgccaactgt acataggacc ctacctgct gcctccccgc 4108
 ctgttccctg gggcagccag gttcgtccat ccccttttaa cctctcaact tgcagctttt 4168
 gcctgagggtc cagcccctag ctgttagaga gg 4200

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tcggggcccccg gaacgagccg cgctggcggc ggcggcggta gccgcg atg atg gag 115																
Met Met Glu 1																
atc cag atg gac gag gga gga ggt gtg gtg gtg tac caa gac gac tac 163																
Ile Gln Met Asp Glu Gly Gly Gly Val Val Val Tyr Gln Asp Asp Tyr 15																
5 10																
tgc tcg ggc tcg gtc atg tcg gag cgt gtg tcg ggc ctg gcg ggc tcc 211																
Cys Ser Gly Ser Val Met Ser Glu Arg Val Ser Gly Leu Ala Gly Ser 35																
20 25 30																
atc tac cgc gag ttc gag cgc ctc att cac tgc tat gac gag gag gtg 259																
Ile Tyr Arg Glu Phe Glu Arg Leu Ile His Cys Tyr Asp Glu Glu Val 40 45 50																
gtc aag gag ctc atg ccg ctg gtg gtg aac gtg ctg gag aac ctt gac 307																
Val Lys Glu Leu Met Pro Leu Val Val Asn Val Leu Glu Asn Leu Asp 55 60 65																
tcg gtg ctg agc gag aac cag gag cac gag gtg gag ctg gag ctc cta 355																
Ser Val Leu Ser Glu Asn Gln Glu His Glu Val Glu Leu Glu Leu Leu 70 75 80																
cgc gag gac aac gag cag ctg ctc acg caa tac gag cgc gag aag gcg 403																
Arg Glu Asp Asn Glu Gln Leu Leu Thr Gln Tyr Glu Arg Glu Lys Ala 85 90 95																
ctg cgc aaa cag gcc gag gag aaa ttc atc gaa ttt gaa gat gcc ttg 451																
Leu Arg Lys Gln Ala Glu Glu Lys Phe Ile Glu Phe Glu Asp Ala Leu 100 105 110 115																
gaa caa gag aag aaa gaa ctc cag atc cag gta gaa cat tat gag ttt 499																
Glu Gln Glu Lys Lys Glu Leu Gln Ile Gln Val Glu His Tyr Glu Phe 120 125 130																
cag aca cgc cag ctg gag cta aag gcc aaa aac tat gca gat cag att 547																
Gln Thr Arg Gln Leu Glu Leu Lys Ala Lys Asn Tyr Ala Asp Gln Ile 135 140 145																
tcc cga ctg gag gaa cga gaa tcg gag atg aag aag gaa tac aat gcc 595																
Ser Arg Leu Glu Glu Arg Glu Ser Glu Met Lys Lys Glu Tyr Asn Ala 150 155 160																
ctg cac cag cgg cac aca gag atg atc cag acc tat gtg gaa cac att 643																
Leu His Gln Arg His Thr Glu Met Ile Gln Thr Tyr Val Glu His Ile																

165	170	175	
gaa aga tcc aag atg Glu Arg Ser Lys Met 180	cag caa gtt ggg ggt Gln Gln Val Gly Gly 185	agc ggc caa aca gaa agc Ser Gly Gln Thr Glu Ser 190	691
agc ctg ccc ggg cgg Ser Leu Pro Gly Arg 200	agc agg aag gag cgt Ser Arg Lys Glu Arg 205	ccc acc tct ctg aat gtc Pro Thr Ser Leu Asn Val 210	739
ttc ccc ctg gct gat Phe Pro Leu Ala Asp 215	ggc atg gta cgt gca Gly Met Val Arg Ala 220	cag atg ggg ggc aag ctc Gln Met Gly Gly Lys Leu 225	787
gtg cct gcg ggg gac Val Pro Ala Gly Asp 230	cac tgg cac ctg agt His Trp His Leu Ser 235	gac ctc ggc cag cta cag Asp Leu Gly Gln Leu Gln 240	835
tcc agc tcc agc tac Ser Ser Ser Ser Tyr 245	cag tgt cca aac gat Gln Cys Pro Asn Asp 250	gag atg tct gag tca ggc Glu Met Ser Glu Ser Gly 255	883
cag tcc tca gca gct Gln Ser Ser Ala Ala 260	gca aca ccc agt acc Ala Thr Pro Ser Thr 265	aca ggt acc aag tcc aac Thr Gly Thr Lys Ser Asn 270	931
aca ccc acg tcc tcc Thr Pro Thr Ser Ser 280	gtg ccc tca gca gca Val Pro Ser Ala Ala 285	gtc acg cca ctc aac gag Val Thr Pro Leu Asn Glu 290	979
agc cta cag ccc ctg Ser Leu Gln Pro Leu 295	ggg gac tat gtc agt Gly Asp Tyr Val Ser 300	gtc aca aag aac aac aag Val Thr Lys Asn Asn Lys 305	1027
cag gcc cga gag aag Gln Ala Arg Glu Lys 310	cgc aat agc cgt aac Arg Asn Ser Arg Asn 315	atg gag gtc cag gtc acc Met Glu Val Gln Val Thr 320	1075
caa gag atg cgg aac Gln Glu Met Arg Asn 325	gtc agt atc ggc atg Val Ser Ile Gly Met 330	ggc agc agt gac gag tgg Gly Ser Ser Asp Glu Trp 335	1123
tcc gat gtt cag gac Ser Asp Val Gln Asp 340	att atc gac tcc acc Ile Ile Asp Ser Thr 345	cca gag ctg gat gtg tgt Pro Glu Leu Asp Val Cys 350	1171
cct gaa acc cgt ctg Pro Glu Thr Arg Leu 360	gag cgc aca gga agc Glu Arg Thr Gly Ser 365	agc cca acc cag gga att Ser Pro Thr Gln Gly Ile 370	1219
gta aac aaa gct ttt Val Asn Lys Ala Phe 375	gga atc aac act gac Gly Ile Asn Thr Asp 380	tcc ttg tat cac gaa ctc Ser Leu Tyr His Glu Leu 385	1267
tcc acg gcg gga tct Ser Thr Ala Gly Ser 390	gag gtc atc ggg gat Glu Val Ile Gly Asp 395	gtg gac gag gga gct gat Val Asp Glu Gly Ala Asp 400	1315
ctc cta ggg gag ttt Leu Leu Gly Glu Phe 410	tca gtg cgc gat gat Ser Val Arg Asp Asp 415	ttt ttt gga atg ggc aaa Phe Phe Gly Met Gly Lys 420	1363

405	410	415	
gaa gtg ggg aac ctg ctg ctg gag aac tca cag ctt cta gag aca aaa Glu Val Gly Asn Leu Leu Leu Glu Asn Ser Gln Leu Leu Glu Thr Lys 420 425 430 435			1411
aat gct tta aat gta gtg aag aat gac ctc att gct aag gtt gac caa Asn Ala Leu Asn Val Val Lys Asn Asp Leu Ile Ala Lys Val Asp Gln 440 445 450			1459
ctg tca gga gaa cag gag gtc ctg aag ggt gag ctg gaa gca gcc aag Leu Ser Gly Glu Gln Glu Val Leu Lys Gly Glu Leu Glu Ala Ala Lys 455 460 465			1507
caa gcg aaa gtc aag ctg gag aac cga atc aaa gag ctt gaa gaa gaa Gln Ala Lys Val Lys Leu Glu Asn Arg Ile Lys Glu Leu Glu Glu Glu 470 475 480			1555
ctg aag aga gtc aag tca gag gca gta act gcc cgc cgt gag ccc aga Leu Lys Arg Val Lys Ser Glu Ala Val Thr Ala Arg Arg Glu Pro Arg 485 490 495			1603
gaa gag gtg gag gat gta agc agc tat ctc tgt aca gaa ttg gac aaa Glu Glu Val Glu Asp Val Ser Ser Tyr Leu Cys Thr Glu Leu Asp Lys 500 505 510 515			1651
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gtg ctc atg gaa cgc aac cag tac aag gaa cgc ctc atg gag ctg cag Val Leu Met Glu Arg Asn Gln Tyr Lys Glu Arg Leu Met Glu Leu Gln 535 540 545			1747
gag gct gtg agg tgg act gaa atg atc aga gca tca agg gaa cac cca Glu Ala Val Arg Trp Thr Glu Met Ile Arg Ala Ser Arg Glu His Pro 550 555 560			1795
tct gtc cag gag aag aag aag tcc acc atc tgg cag ttc ttt agt cgc Ser Val Gln Glu Lys Lys Lys Ser Thr Ile Trp Gln Phe Phe Ser Arg 565 570 575			1843
ctc ttc agc tcc tca tct agc ccc cct ccg gcc aaa cga tcc tac cca Leu Phe Ser Ser Ser Ser Ser Pro Pro Pro Ala Lys Arg Ser Tyr Pro 580 585 590 595			1891
tct gtg aac att cac tac aag tca ccc act gca gct ggc ttt agc cag Ser Val Asn Ile His Tyr Lys Ser Pro Thr Ala Ala Gly Phe Ser Gln 600 605 610			1939
cgt cgc agc cat gct ttg tgc cag atc tca gcc ggc agc agg ccc ctg Arg Arg Ser His Ala Leu Cys Gln Ile Ser Ala Gly Ser Arg Pro Leu 615 620 625			1987
gag ttc ttc cct gat gat gac tgc acc tct tct gcc cgg cgg gag cag Glu Phe Phe Pro Asp Asp Asp Cys Thr Ser Ser Ala Arg Arg Glu Gln 630 635 640			2035
aag cgg gag cag tac cgc cag gtt cgt gaa cac gtg cgc aat gat gac Lys Arg Glu Gln Tyr Arg Gln Val Arg Glu His Val Arg Asn Asp Asp 645 650 655			2083

645	650	655	
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ctg agc ccc aat gga ggc cag gaa gac acc cgg atg aaa aat gtg cct Leu Ser Pro Asn Gly Gly Gln Glu Asp Thr Arg Met Lys Asn Val Pro 680 685 690			2179
gtc cct gtg tac tgt cgc cct ctg gtg gag aag gac cct tcg aca aag Val Pro Val Tyr Cys Arg Pro Leu Val Glu Lys Asp Pro Ser Thr Lys 695 700 705			2227
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gag gac tct agc aat gga ccc aag cct gta cca ggt cga gac cct ctg Glu Asp Ser Ser Asn Gly Pro Lys Pro Val Pro Gly Arg Asp Pro Leu 725 730 735			2323
acc tgt gac cgg gaa gga gaa ggc gaa ccc aag agc aca cac cca tca Thr Cys Asp Arg Glu Gly Glu Gly Glu Pro Lys Ser Thr His Pro Ser 740 745 750 755			2371
cct gag aag aag aag gca aag gaa acc cct gag gca gat gct acc tcc Pro Glu Lys Lys Lys Ala Lys Glu Thr Pro Glu Ala Asp Ala Thr Ser 760 765 770			2419
agt cgg gta tgg atc ctc acc agc acc ctg aca acc agc aag gtg gtg Ser Arg Val Trp Ile Leu Thr Ser Thr Leu Thr Thr Ser Lys Val Val 775 780 785			2467
atc att gat gcc aac cag cca ggc aca att gtg gat cag ttc aca gtc Ile Ile Asp Ala Asn Gln Pro Gly Thr Ile Val Asp Gln Phe Thr Val 790 795 800			2515
tgc aat gcc cac gtc ctg tgt atc tcc agc att cct gcg gcc agt gac Cys Asn Ala His Val Leu Cys Ile Ser Ser Ile Pro Ala Ala Ser Asp 805 810 815			2563
agt gac tat ccc cct ggg gag atg ttc cta gac agt gat gtg aac cct Ser Asp Tyr Pro Pro Gly Glu Met Phe Leu Asp Ser Asp Val Asn Pro 820 825 830 835			2611
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gac acc cca gta ctg gac aag ggg cag ggg gat gtg gcg acc act gcc Asp Thr Pro Val Leu Asp Lys Gly Gln Gly Asp Val Ala Thr Thr Ala 870 875 880			2755
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885	890	895	
aca gag gtg cca gac cct ggt ccc agc gag tca gaa gca acg aca gtc Thr Glu Val Pro Asp Pro Gly Pro Ser Glu Ser Glu Ala Thr Thr Val 900 905 910 915			2851
cgg ccc ggg cct ctc aca gag cat gtc ttt act gac cca gca ccc acc Arg Pro Gly Pro Leu Thr Glu His Val Phe Thr Asp Pro Ala Pro Thr 920 925 930			2899
cca tcc tcc agc acc cag cct gcc agt gag aat ggg tca gaa tcc aat Pro Ser Ser Ser Thr Gln Pro Ala Ser Glu Asn Gly Ser Glu Ser Asn 935 940 945			2947
ggc acc att gta cag cct cag gtg gag ccc agt ggg gaa ctc tca aca Gly Thr Ile Val Gln Pro Gln Val Glu Pro Ser Gly Glu Leu Ser Thr 950 955 960			2995
aca acc agt agc gct gca ccc act atg tgg cta gga gcc cag aat ggc Thr Thr Ser Ser Ala Ala Pro Thr Met Trp Leu Gly Ala Gln Asn Gly 965 970 975			3043
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cga gtg ctg gta gct ctt gca gat ggg acc ctg gct atc ttc cat cgt Arg Val Leu Val Ala Leu Ala Asp Gly Thr Leu Ala Ile Phe His Arg 1015 1020 1025			3187
gga gag gat ggc cag tgg gac ctg agc aac tac cac cta atg gac ctg Gly Glu Asp Gly Gln Trp Asp Leu Ser Asn Tyr His Leu Met Asp Leu 1030 1035 1040			3235
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gtt tgg tgt ggc tac aag aac aag gtg cat gtt atc cag ccc aag aca Val Trp Cys Gly Tyr Lys Asn Lys Val His Val Ile Gln Pro Lys Thr 1060 1065 1070 1075			3331
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Phe Ile Pro Tyr Cys Ser Met Ala Gln Ala Gln Leu Cys Phe His Gly			
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Asn	Leu	Phe	Thr	Asp	Val	Ala	Cys	Gly	Arg	Gly	Glu	Lys	Ala	Asp	Ser	
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Arg	Leu	Leu	Asp	Lys	Trp	Val	Glu	Leu	Arg	Asn	Thr	Asp	Ser	Phe	Thr	
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Pro	Lys	Lys	Val	Gly	Lys	Val	Tyr	Ser	Ala	Leu	Tyr	His	Ser	Ser	Cys	
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Pro Lys Gln Val Ala Pro Val Leu Leu Thr Arg Arg Arg Asn Asn Leu	
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Arg Gly Pro Arg Asn Lys Lys Arg Gly Trp Arg Arg Leu Ala Glu Glu	

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Pro Leu Gly Leu Glu Val Asp Gln Phe Leu Glu Asp Val Arg Leu Gln			
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Glu Arg Thr Thr Gly Gly Leu Leu Ala Glu Ala Pro Asn Glu Lys Leu			
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Phe Phe Val Asp Thr Gly Phe Lys Arg Lys Glu Pro Arg Lys Lys Arg			
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Thr Leu Val Gln Lys Lys Ser Gln Arg Leu Gln Lys Pro Leu Arg Val			
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gac ctt gcc ctt gag aat cat tct aag atc cct gct ccc aaa gac atc			384
Asp Leu Ala Leu Glu Asn His Ser Lys Ile Pro Ala Pro Lys Asp Ile			
	115	120	125
ctc gca cat cag gtc cct aat gcc aag aag ctc agg cga aag gag gag			432
Leu Ala His Gln Val Pro Asn Ala Lys Lys Leu Arg Arg Lys Glu Glu			
	130	135	140
tta tgg gag aaa ctg gca aag cag ggc gaa ctg ccc agg gat gtg cgc			480
Leu Trp Glu Lys Leu Ala Lys Gln Gly Glu Leu Pro Arg Asp Val Arg			
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aag gca cag gcc cga ctc ctt agc cct ccc aca cca aag gcc aaa cct			528
Lys Ala Gln Ala Arg Leu Leu Ser Pro Pro Thr Pro Lys Ala Lys Pro			
	165	170	175
ggg ccc cag gac atc att gag cga ccc ttc tat gac ctc tgg aac cca			576
Gly Pro Gln Asp Ile Ile Glu Arg Pro Phe Tyr Asp Leu Trp Asn Pro			
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gac aac cct ctg gac acg cct ttg att ggt cag gat gca ttt ttt ctg			624
Asp Asn Pro Leu Asp Thr Pro Leu Ile Gly Gln Asp Ala Phe Phe Leu			
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gaa cag acc aag aag aaa ggc gtg agg cgg cca caa cgc ctc cac atc			672
Glu Gln Thr Lys Lys Lys Gly Val Arg Arg Pro Gln Arg Leu His Ile			
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Tyr Asn Pro Thr			

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Ser Gln Ala Asp Ser Gly Phe Leu Gly Leu Arg Pro Thr Ser Val Asp
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ccc gct ctg agg cgg cgg cgg cgg ggc ccc aga aac aag aag cgc ggc      147
Pro Ala Leu Arg Arg Arg Arg Arg Gly Pro Arg Asn Lys Lys Arg Gly
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Trp Arg Arg Leu Ala Glu Glu Pro Leu Gly Leu Glu Val Asp Gln Phe
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Leu Glu Asp Val Arg Leu Gln Glu Arg Thr Thr Gly Gly Leu Leu Ala
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gag gcc cca aac gaa aag ctc ttc ttc gtg gac aca gga ttc aag aga      291
Glu Ala Pro Asn Glu Lys Leu Phe Phe Val Asp Thr Gly Phe Lys Arg
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aaa gaa cca aga aag aag agg acc ttg gtc cag aag aag tca cag cgt      339
Lys Glu Pro Arg Lys Lys Arg Thr Leu Val Gln Lys Lys Ser Gln Arg
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ctc cag aaa ccc tta cgg gtt gac ctt gcc ctt gag aat cat tct aag      387
Leu Gln Lys Pro Leu Arg Val Asp Leu Ala Leu Glu Asn His Ser Lys
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atc cct gct ccc aaa gac atc ctc gca cat cag gtc cct aat gcc aag      435
Ile Pro Ala Pro Lys Asp Ile Leu Ala His Gln Val Pro Asn Ala Lys
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Lys Leu Arg Arg Lys Glu Glu Leu Trp Glu Lys Leu Ala Lys Gln Gly
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gaa ctg ccc agg gat gtg cgc aag gca cag gcc cga ctc ctt agc cct      531
Glu Leu Pro Arg Asp Val Arg Lys Ala Gln Ala Arg Leu Leu Ser Pro
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ccc aca cca aag gcc aaa cct ggg ccc cag gac atc att gag cga ccc      579
Pro Thr Pro Lys Ala Lys Pro Gly Pro Gln Asp Ile Ile Glu Arg Pro
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ttc tat gac ctc tgg aac cca gac aac cct ctg gac acg cct ttg att      627
Phe Tyr Asp Leu Trp Asn Pro Asp Asn Pro Leu Asp Thr Pro Leu Ile
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Val	Ile	Pro	Ala	Gly	Ala	Ser	Tyr	Asn	Pro	Thr	Phe	Glu	Asp	His	Gln		
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Glu	Ala	Gly	Asp	Gly	Thr	Thr	Glu	Ile	Ser	Pro	Thr	Gly	Ala	Ala	Gly		
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cct	gag	aag	agg	atg	gag	aag	aag	acg	gag	cag	cag	cg	cg	cg	gag	1059	
Pro	Glu	Lys	Arg	Met	Glu	Lys	Lys	Thr	Glu	Gln	Gln	Arg	Arg	Arg	Glu		
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Lys	Ala	Ala	Arg	Lys	Leu	Arg	Val	Gln	Gln	Ala	Ala	Leu	Arg	Ala	Ala		
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cg	ctt	cag	cac	caa	gaa	ctt	ttc	agg	ctg	cgt	ggg	atc	aag	gcc	cag	1155	
Arg	Leu	Gln	His	Gln	Glu	Leu	Phe	Arg	Leu	Arg	Gly	Ile	Lys	Ala	Gln		
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Val	Ala	Arg	Arg	Leu	Ala	Glu	Leu	Ala	Arg	Arg	Arg	Glu	Gln	Arg	Arg		
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Ile	Arg	Arg	Leu	Ala	Glu	Ala	Asp	Lys	Pro	Arg	Arg	Leu	Gly	Arg	Leu		
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 Asp Gln Ile Ser Arg Leu Glu Glu Arg Glu Ser Glu Met Lys Lys Glu
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 Asp Val Cys Pro Glu Thr Arg Leu Glu Arg Thr Gly Ser Ser Pro Thr
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 Glu Leu Gln Glu Ala Val Arg Trp Thr Glu Met Ile Arg Ala Ser Arg
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 Glu His Pro Ser Val Gln Glu Lys Lys Lys Ser Thr Ile Trp Gln Phe
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 Phe Ser Arg Leu Phe Ser Ser Ser Ser Ser Pro Pro Pro Ala Lys Arg
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Glu Glu Val Val Lys Glu Leu Met Pro Leu Val Val Asn Val Leu Glu
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Glu Leu Leu Arg Glu Asp Asn Glu Gln Leu Leu Thr Gln Tyr Glu Arg
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Glu Lys Ala Leu Arg Lys Gln Ala Glu Glu Lys Phe Ile Glu Phe Glu
100 105 110

Asp Ala Leu Glu Gln Glu Lys Lys Glu Leu Gln Ile Gln Val Glu His
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Tyr Glu Phe Gln Thr Arg Gln Leu Glu Leu Lys Ala Lys Asn Tyr Ala
130 135 140

Asp Gln Ile Ser Arg Leu Glu Glu Arg Glu Ser Glu Met Lys Lys Glu
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Ser	Arg	Lys	Glu	Arg	Pro	Thr	Ser	Leu	Asn	Val	Phe	Pro	Leu	Ala	Asp	210	215	220
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 Pro Glu

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 Glu Glu Val Val Lys Glu Leu Met Pro Leu Val Val Asn Val Leu Glu
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 Asn Leu Asp Ser Val Leu Ser Glu Asn Gln Glu His Glu Val Glu Leu
 65 70 75 80
 Glu Leu Leu Arg Glu Asp Asn Glu Gln Leu Leu Thr Gln Tyr Glu Arg

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Glu	His	Ile	Glu	Arg	Ser	Lys	Met	Gln	Gln	Val	Gly	Gly	Ser	Gly	Gln				
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Gln	Leu	Gln	Ser	Ser	Ser	Ser	Tyr	Gln	Cys	Pro	Asn	Asp	Glu	Met	Ser				
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Lys	Ser	Asn	Thr	Pro	Thr	Ser	Ser	Val	Pro	Ser	Ala	Ala	Val	Thr	Pro				
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Gln	Val	Thr	Gln	Glu	Met	Arg	Asn	Val	Ser	Ile	Gly	Met	Gly	Ser	Ser				
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Asp	Glu	Trp	Ser	Asp	Val	Gln	Asp	Ile	Ile	Asp	Ser	Thr	Pro	Glu	Leu				
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Asp	Val	Cys	Pro	Glu	Thr	Arg	Leu	Glu	Arg	Thr	Gly	Ser	Ser	Pro	Thr				
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Glu	Pro	Arg	Glu	Glu	Val	Glu	Asp	Val	Ser	Ser	Tyr	Leu	Cys	Thr	Glu				
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Glu	Leu	Gln	Glu	Ala	Val	Arg	Trp	Thr	Glu	Met	Ile	Arg	Ala	Ser	Arg				
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Phe	Ser	Arg	Leu	Phe	Ser	Ser	Ser	Ser	Ser	Pro	Pro	Pro	Ala	Lys	Arg				
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Ser	Tyr	Pro	Ser	Val	Asn	Ile	His	Tyr	Lys	Ser	Pro	Thr	Ala	Ala	Gly				
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Tyr	Lys	Gln	Leu	Ser	Pro	Asn	Gly	Gly	Gln	Glu	Asp	Thr	Arg	Met	Lys				
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Ser	Thr	Lys	Leu	Trp	Cys	Ala	Ala	Gly	Val	Asn	Leu	Ser	Gly	Trp	Lys				
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Ala	Thr	Ser	Ser	Arg	Val	Trp	Ile	Leu	Thr	Ser	Thr	Leu	Thr	Thr	Ser															
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Lys	Val	Val	Ile	Ile	Asp	Ala	Asn	Gln	Pro	Gly	Thr	Ile	Val	Asp	Gln															
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Gln	Asn	Gly	Trp	Leu	Tyr	Val	His	Ser	Ala	Val	Ala	Asn	Trp	Lys	Lys															
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Cys	Leu	His	Ser	Ile	Lys	Leu	Lys	Asp	Ser	Val	Leu	Ser	Leu	Val	His															
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Phe	His	Arg	Gly	Glu	Asp	Gly	Gln	Trp	Asp	Leu	Ser	Asn	Tyr	His	Leu															
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Glu Ser Gln Val Arg Gln Leu Ala Trp Ile Gly Asp Gly Val Trp Val 1090 1095 1100		
Ser Ile Arg Leu Asp Ser Thr Leu Arg Leu Tyr His Ala His Thr His 1105 1110 1115 1120		
Gln His Leu Gln Asp Val Asp Ile Glu Pro Tyr Val Ser Lys Met Leu 1125 1130 1135		
Gly Thr Gly Lys Leu Gly Phe Ser Phe Val Arg Ile Thr Ala Leu Leu 1140 1145 1150		
Ile Ala Gly Asn Arg Leu Trp Val Gly Thr Gly Asn Gly Val Val Ile 1155 1160 1165		
Ser Ile Pro Leu Thr Glu Thr Val Val Leu His Arg Gly Gln Leu Leu 1170 1175 1180		
Gly Leu Arg Ala Asn Lys Thr Ser Pro Thr Ser Gly Glu Gly Thr Arg 1185 1190 1195 1200		
Pro Gly Gly Ile Ile His Val Tyr Gly Asp Asp Ser Ser Asp Lys Ala 1205 1210 1215		
Ala Ser Ser Phe Ile Pro Tyr Cys Ser Met Ala Gln Ala Gln Leu Cys 1220 1225 1230		
Phe His Gly His Arg Asp Ala Val Lys Phe Phe Val Ser Val Pro Gly 1235 1240 1245		
Asn Val Leu Ala Thr Leu Asn Gly Ser Val Leu Asp Ser Pro Ser Glu 1250 1255 1260		
Gly Pro Gly Pro Ala Ala Pro Ala Ala Asp Ala Glu Gly Gln Lys Leu 1265 1270 1275 1280		
Lys Asn Ala Leu Val Leu Ser Gly Gly Glu Gly Tyr Ile Asp Phe Arg 1285 1290 1295		
Ile Gly Asp Gly Glu Asp Asp Glu Thr Glu Glu Cys Ala Gly Asp Val 1300 1305 1310		
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Ala	Gly	Ser	Ile	Tyr	Arg	Glu	Phe	Glu	Arg	Leu	Ile	His	Cys	Tyr	Asp
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Glu	Glu	Val	Val	Lys	Glu	Leu	Met	Pro	Leu	Val	Val	Asn	Val	Leu	Glu
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Asn	Leu	Asp	Ser	Val	Leu	Ser	Glu	Asn	Gln	Glu	His	Glu	Val	Glu	Leu
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Glu	Leu	Leu	Arg	Glu	Asp	Asn	Glu	Gln	Leu	Leu	Thr	Gln	Tyr	Glu	Arg
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Glu	Lys	Ala	Leu	Arg	Lys	Gln	Ala	Glu	Glu	Lys	Phe	Ile	Glu	Phe	Glu
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Tyr	Glu	Phe	Gln	Thr	Arg	Gln	Leu	Glu	Leu	Lys	Ala	Lys	Asn	Tyr	Ala
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Asp	Gln	Ile	Ser	Arg	Leu	Glu	Glu	Arg	Glu	Ser	Glu	Met	Lys	Lys	Glu
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Tyr	Asn	Ala	Leu	His	Gln	Arg	His	Thr	Glu	Met	Ile	Gln	Thr	Tyr	Val
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Val	Thr	Gln	Glu	Met	Arg	Asn	Val	Ser	Ile	Gly	Met	Gly	Ser	Ser	Asp	
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Glu	Trp	Ser	Asp	Val	Gln	Asp	Ile	Ile	Asp	Ser	Thr	Pro	Glu	Leu	Asp	
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Val	Cys	Pro	Glu	Thr	Arg	Leu	Glu	Arg	Thr	Gly	Ser	Ser	Pro	Thr	Gln	
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Gly	Ile	Val	Asn	Lys	Ala	Phe	Gly	Ile	Asn	Thr	Asp	Ser	Leu	Tyr	His	
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Glu	Leu	Ser	Thr	Ala	Gly	Ser	Glu	Val	Ile	Gly	Asp	Val	Asp	Glu	Gly	
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Ala	Asp	Leu	Leu	Gly	Glu	Phe	Ser	Val	Arg	Asp	Asp	Phe	Phe	Gly	Met	
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Thr	Lys	Asn	Ala	Leu	Asn	Val	Val	Lys	Asn	Asp	Leu	Ile	Ala	Lys	Val	
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Ala	Lys	Gln	Ala	Lys	Val	Lys	Leu	Glu	Asn	Arg	Ile	Lys	Glu	Leu	Glu	
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Glu	Glu	Leu	Lys	Arg	Val	Lys	Ser	Glu	Ala	Val	Thr	Ala	Arg	Arg	Glu	
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Leu	Gln	Glu	Ala	Val	Arg	Trp	Thr	Glu	Met	Ile	Arg	Ala	Ser	Arg	Glu	
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 Glu Gln Lys Arg Glu Gln Tyr Arg Gln Val Arg Glu His Val Arg Asn
 645 650 655
 Asp Asp Gly Arg Leu Gln Ala Cys Gly Trp Ser Leu Pro Ala Lys Tyr
 660 665 670
 Lys Gln Leu Ser Pro Asn Gly Gly Gln Glu Asp Thr Arg Met Lys Asn
 675 680 685
 Val Pro Val Pro Val Tyr Cys Arg Pro Leu Val Glu Lys Asp Pro Ser
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 Thr Lys Leu Trp Cys Ala Ala Gly Val Asn Leu Ser Gly Trp Lys Pro
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 His Glu Glu Asp Ser Ser Asn Gly Pro Lys Pro Val Pro Gly Arg Asp
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 Pro Leu Thr Cys Asp Arg Glu Gly Glu Gly Glu Pro Lys Ser Thr His
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 Pro Ser Pro Glu Lys Lys Lys Ala Lys Glu Thr Pro Glu Ala Asp Ala
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 Thr Ser Ser Arg Val Trp Ile Leu Thr Ser Thr Leu Thr Thr Ser Lys
 770 775 780
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 Thr Val Cys Asn Ala His Val Leu Cys Ile Ser Ser Ile Pro Ala Ala
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 Ser Asp Ser Asp Tyr Pro Pro Gly Glu Met Phe Leu Asp Ser Asp Val
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 Val Gly Cys Ala Thr Arg Cys Asn Val Pro Arg Ser Asn Cys Ser Ser
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 Arg Gly Asp Thr Pro Val Leu Asp Lys Gly Gln Gly Asp Val Ala Thr
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 Thr Ala Asn Gly Lys Val Asn Pro Ser Gln Ser Thr Glu Glu Ala Thr
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 Thr Val Arg Pro Gly Pro Leu Thr Glu His Val Phe Thr Asp Pro Ala
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 Pro Thr Pro Ser Ser Ser Thr Gln Pro Ala Ser Glu Asn Gly Ser Glu
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Ser Asn Gly Thr Ile Val Gln Pro Gln Val Glu Pro Ser Gly Glu Leu
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 Ser Thr Thr Thr Ser Ser Ala Ala Pro Thr Met Trp Leu Gly Ala Gln
 965 970 975
 Asn Gly Trp Leu Tyr Val His Ser Ala Val Ala Asn Trp Lys Lys Cys
 980 985 990
 Leu His Ser Ile Lys Leu Lys Asp Ser Val Leu Ser Leu Val His Val
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 Lys Gly Arg Val Leu Val Ala Leu Ala Asp Gly Thr Leu Ala Ile Phe
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 Asp Arg Val Trp Cys Gly Tyr Lys Asn Lys Val His Val Ile Gln Pro
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 Lys Thr Met Gln Ile Glu Lys Ser Phe Asp Ala His Pro Arg Arg Glu
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 Ser Ser Phe Ile Pro Tyr Cys Ser Met Ala Gln Ala Gln Leu Cys Phe
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 His Gly His Arg Asp Ala Val Lys Phe Phe Val Ser Val Pro Gly Asn
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 Val Leu Ala Thr Leu Asn Gly Ser Val Leu Asp Ser Pro Ser Glu Gly
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Pro Gly Pro Ala Ala Pro Ala Ala Asp Ala Glu Gly Gln Lys Leu Lys
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Asn Ala Leu Val Leu Ser Gly Gly Glu Gly Tyr Ile Asp Phe Arg Ile
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Gly Asp Gly Glu Asp Asp Glu Thr Glu Glu Cys Ala Gly Asp Val Asn
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Gln Thr Lys Pro Ser Leu Ser Lys Ala Glu Arg Ser His Ile Ile Val
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Trp Gln Val Ser Tyr Thr Pro Glu
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Ile Leu Lys Asp Val Ala Thr Val Ala Phe Cys Asp Ala Gln Ser Thr
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Gln Glu Ile His Glu Lys Val Leu Asn Glu Ala Val Gly Ala Leu Met
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Tyr His Thr Ile Thr Leu Thr Arg Glu Asp Leu Glu Lys Phe Lys Ala
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Leu Arg Ile Ile Val Arg Ile Gly Ser Gly Phe Asp Asn Ile Asp Ile
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Lys Ser Ala Gly Asp Leu Gly Ile Ala Val Cys Asn Val Pro Ala Ala
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Ser Val Glu Glu Thr Ala Asp Ser Thr Leu Cys His Ile Leu Asn Leu
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Tyr Arg Arg Thr Thr Trp Leu His Gln Ala Leu Arg Glu Gly Thr Arg
 130 135 140

Val Gln Ser Val Glu Gln Ile Arg Glu Val Ala Ser Gly Ala Ala Arg
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Ile Arg Gly Glu Thr Leu Gly Ile Ile Gly Leu Gly Arg Val Gly Gln
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Ala Val Ala Leu Arg Ala Lys Ala Phe Gly Phe Asn Val Leu Phe Tyr
 180 185 190

Asp Pro Tyr Leu Ser Asp Gly Ile Glu Arg Ala Leu Gly Leu Gln Arg
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Val Ser Thr Leu Gln Asp Leu Leu Phe His Ser Asp Cys Val Thr Leu
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 Val Lys Gln Met Arg Gln Gly Ala Phe Leu Val Asn Thr Ala Arg Gly
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 Gly Leu Val Asp Glu Lys Ala Val Ala Gln Ala Leu Lys Glu Gly Arg
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 Ile Arg Gly Ala Ala Leu Asp Val His Glu Ser Glu Pro Phe Ser Phe
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 Ser Gln Gly Pro Leu Lys Asp Ala Pro Asn Leu Ile Cys Thr Pro His
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 Lys Asn Cys Val Asn Lys Asp His Leu Thr Ala Ala Thr His Trp Ala
 340 345 350
 Ser Met Asp Pro Ala Val Val His Pro Glu Leu Asn Gly Ala Ala Tyr
 355 360 365
 Ser Arg Tyr Pro Pro Gly Val Val Ser Val Ala Pro Thr Gly Ile Pro
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 Ala Ala Val Glu Gly Ile Val Pro Ser Ala Met Ser Leu Ser His Gly
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 Val Lys Pro Glu Ala Asp Arg Asp His Thr Ser Asp Gln Leu
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 <211> 1508
 <212> PRT
 <213> Mouse

<400> 14
 Met Met Ala Gly Glu Gly Ser Thr Ile Thr Ser Arg Ile Lys Asn Leu
 1 5 10 15
 Leu Arg Ser Pro Ser Ile Lys Leu Arg Arg Ser Lys Ala Gly Asn Arg
 20 25 30
 Arg Glu Asp Leu Ser Ser Lys Val Thr Leu Glu Lys Val Leu Gly Val
 35 40 45
 Thr Val Ser Gly Gly Arg Gly Leu Ala Cys Glu Pro Arg Ser Gly Leu

50	55	60
Val Ala Tyr Pro Ala Gly Cys Val Val Val Leu Phe Asn Pro Arg Lys 65 70 75 80		
His Lys Gln His His Ile Leu Asn Ser Ser Arg Lys Thr Ile Thr Ala 85 90 95		
Leu Ala Phe Ser Pro Asp Gly Lys Tyr Leu Val Thr Gly Glu Ser Gly 100 105 110		
His Met Pro Ala Val Arg Val Trp Asp Val Ala Glu Arg Ser Gln Val 115 120 125		
Ala Glu Leu Gln Glu His Lys Tyr Gly Val Ala Cys Val Ala Phe Ser 130 135 140		
Pro Ser Ala Lys Tyr Ile Val Ser Val Gly Tyr Gln His Asp Met Ile 145 150 155 160		
Val Asn Val Trp Ala Trp Lys Lys Asn Ile Val Val Ala Ser Asn Lys 165 170 175		
Val Ser Ser Arg Val Thr Ala Val Ser Phe Ser Glu Asp Cys Ser Tyr 180 185 190		
Phe Val Thr Ala Gly Asn Arg His Ile Lys Phe Trp Tyr Leu Asp Asp 195 200 205		
Ser Lys Thr Ser Lys Val Asn Ala Thr Val Pro Leu Leu Gly Arg Ser 210 215 220		
Gly Leu Leu Gly Glu Leu Arg Asn Asn Leu Phe Thr Asp Val Ala Cys 225 230 235 240		
Gly Arg Gly Glu Lys Ala Asp Ser Thr Phe Cys Ile Thr Ser Ser Gly 245 250 255		
Leu Leu Cys Glu Phe Ser Asp Arg Arg Leu Leu Asp Lys Trp Val Glu 260 265 270		
Leu Arg Asn Thr Asp Ser Phe Thr Thr Thr Val Ala His Cys Ile Ser 275 280 285		
Val Thr Gln Glu Tyr Ile Phe Cys Gly Cys Ala Asp Gly Thr Val Arg 290 295 300		
Leu Phe Asn Pro Ser Asn Leu His Phe Leu Ser Thr Leu Pro Arg Pro 305 310 315 320		
His Ala Leu Gly Thr Asp Ile Ala Ser Ile Thr Glu Ala Ser Arg Leu 325 330 335		
Phe Ser Gly Gly Val Asn Ala Arg Tyr Pro Asp Thr Ile Ala Leu Thr 340 345 350		
Phe Asp Pro Thr Asn Gln Trp Leu Ser Cys Val Tyr Asn Asp His Ser 355 360 365		
Ile Tyr Val Trp Asp Val Arg Asp Pro Lys Lys Val Gly Lys Val Tyr		

370					375					380					
Ser	Ala	Leu	Tyr	His	Ser	Ser	Cys	Val	Trp	Ser	Val	Glu	Val	Tyr	Pro
385					390					395					400
Glu	Ile	Lys	Asp	Ser	His	Gln	Ala	Cys	Leu	Pro	Leu	Ser	Ser	Phe	Ile
				405					410					415	
Thr	Cys	Ser	Ser	Asp	Asn	Thr	Ile	Arg	Leu	Trp	Asn	Thr	Glu	Ser	Ser
			420					425					430		
Gly	Val	His	Gly	Ser	Thr	Leu	His	Arg	Asn	Ile	Leu	Ser	Asn	Asp	Leu
		435					440					445			
Ile	Lys	Ile	Ile	Tyr	Val	Asp	Gly	Asn	Thr	Gln	Ala	Leu	Leu	Asp	Thr
	450					455					460				
Glu	Leu	Pro	Gly	Gly	Asp	Lys	Ala	Asp	Gly	Ser	Leu	Met	Asp	Pro	Arg
465					470					475					480
Val	Gly	Ile	Arg	Ser	Val	Cys	Ile	Ser	Pro	Asn	Gly	Gln	His	Leu	Ala
				485					490					495	
Ser	Gly	Asp	Arg	Met	Gly	Thr	Leu	Arg	Ile	His	Glu	Leu	Gln	Ser	Leu
			500					505					510		
Ser	Glu	Met	Leu	Lys	Val	Glu	Ala	His	Asp	Ser	Glu	Ile	Leu	Cys	Leu
		515					520					525			
Glu	Tyr	Ser	Lys	Pro	Asp	Thr	Gly	Leu	Lys	Leu	Leu	Ala	Ser	Ala	Ser
	530					535					540				
Arg	Asp	Arg	Leu	Ile	His	Glu	Leu	Asp	Ala	Gly	Arg	Glu	Tyr	Ser	Leu
545					550					555					560
Gln	Gln	Thr	Leu	Asp	Glu	His	Ser	Ser	Ser	Ile	Thr	Ala	Val	Lys	Phe
				565					570					575	
Ala	Ala	Ser	Asp	Gly	Gln	Val	Arg	Met	Ile	Ser	Cys	Gly	Ala	Asp	Lys
			580					585					590		
Ser	Ile	Tyr	Phe	Arg	Thr	Ala	Gln	Lys	Ser	Gly	Glu	Gly	Val	Gln	Phe
		595					600					605			
Thr	Arg	Thr	His	His	Val	Val	Arg	Lys	Thr	Thr	Leu	Tyr	Asp	Met	Asp
	610					615					620				
Val	Glu	Pro	Ser	Trp	Lys	Tyr	Thr	Ala	Ile	Gly	Cys	Gln	Asp	Arg	Asn
625					630					635					640
Ile	Arg	Ile	Phe	Asn	Ile	Ser	Ser	Gly	Lys	Gln	Lys	Lys	Leu	Phe	Lys
				645					650					655	
Gly	Ser	Gln	Gly	Glu	Asp	Gly	Thr	Leu	Ile	Lys	Val	Gln	Thr	Asp	Pro
			660					665					670		
Ser	Gly	Ile	Tyr	Ile	Ala	Thr	Ser	Cys	Ser	Asp	Lys	Asn	Leu	Ser	Ile
		675					680					685			
Phe	Asp	Phe	Ser	Ser	Gly	Glu	Cys	Val	Ala	Thr	Met	Phe	Gly	His	Ser

690					695					700					
Glu	Ile	Val	Thr	Gly	Met	Lys	Phe	Ser	Asn	Asp	Cys	Lys	His	Leu	Ile
705					710					715					720
Ser	Val	Ser	Gly	Asp	Ser	Cys	Ile	Phe	Val	Trp	Arg	Leu	Ser	Ser	Glu
				725					730					735	
Met	Thr	Ile	Ser	Met	Arg	Gln	Arg	Leu	Arg	Glu	Arg	Arg	Gln	Arg	Gln
			740					745					750		
Arg	Gly	Ile	Lys	Gln	Gln	Gly	Pro	Thr	Ser	Pro	Gln	Arg	Ala	Ser	Gly
		755					760					765			
Ala	Lys	Gln	His	His	Ala	Pro	Val	Val	Pro	Pro	Ser	Gly	Pro	Ala	Leu
	770					775					780				
Ser	Ser	Asp	Ser	Asp	Lys	Glu	Gly	Glu	Asp	Glu	Gly	Thr	Glu	Glu	Glu
785					790					795					800
Glu	Leu	Pro	Ala	Leu	Pro	Ile	Leu	Ser	Lys	Ser	Thr	Lys	Lys	Glu	Leu
				805					810					815	
Ala	Ser	Gly	Ser	Ser	Pro	Ala	Leu	Leu	Arg	Ser	Leu	Ser	His	Trp	Glu
			820					825					830		
Met	Ser	Arg	Ala	Gln	Glu	Thr	Met	Glu	Tyr	Leu	Asp	Pro	Ala	Pro	Val
		835					840					845			
Ala	Asn	Thr	Gly	Pro	Lys	Arg	Arg	Gly	Arg	Trp	Ala	Gln	Pro	Gly	Val
	850					855					860				
Glu	Leu	Ser	Val	Arg	Ser	Met	Leu	Asp	Leu	Arg	Gln	Ile	Glu	Thr	Leu
865					870					875					880
Ala	Pro	Ser	Pro	Arg	Gly	Pro	Ser	Gln	Asp	Ser	Leu	Ala	Val	Ser	Pro
				885					890					895	
Ala	Gly	Pro	Gly	Lys	His	Gly	Pro	Gln	Ala	Pro	Glu	Leu	Ser	Cys	Val
			900					905					910		
Ser	Gln	Asn	Glu	Arg	Ala	Pro	Arg	Leu	Gln	Thr	Ser	Gln	Pro	Cys	Ser
		915					920					925			
Cys	Pro	Asp	Ile	Ile	Gln	Leu	Leu	Ser	Gln	Glu	Glu	Gly	Val	Phe	Ala
	930					935					940				
Gln	Asp	Leu	Glu	Pro	Ala	Pro	Ile	Glu	Asp	Gly	Ile	Val	Tyr	Pro	Glu
945					950					955					960
Pro	Ser	Asp	Ser	Pro	Thr	Met	Asp	Thr	Ser	Ala	Phe	Gln	Val	Gln	Ala
				965					970					975	
Pro	Thr	Gly	Gly	Ser	Leu	Gly	Arg	Met	Tyr	Pro	Gly	Ser	Arg	Gly	Ser
			980					985					990		
Glu	Lys	His	Ser	Pro	Asp	Ser	Ala	Cys	Ser	Val	Asp	Tyr	Ser	Ser	Ser
	995					1000					1005				
Arg	Leu	Ser	Ser	Pro	Glu	His	Pro	Asn	Glu	Asp	Ser	Glu	Ser	Thr	Glu

1010	1015	1020
Pro Leu Ser Val Asp Gly Ile Ser Ser Asp Leu Glu Glu Pro Ala Glu 1025 1030 1035 1040		
Gly Asp Glu Asp Glu Glu Glu Glu Gly Gly Thr Gly Leu Cys Gly Leu 1045 1050 1055		
Gln Glu Gly Gly Pro Arg Thr Pro Asp Gln Glu Gln Phe Leu Lys Gln 1060 1065 1070		
Leu Phe Glu Thr Leu Ala Asn Gly Thr Ala Pro Gly Gly Pro Ala Arg 1075 1080 1085		
Val Leu Glu Arg Thr Glu Ser Arg Ser Ile Ser Ser Arg Phe Leu Leu 1090 1095 1100		
Gln Val Gln Thr Leu Pro Leu Arg Glu Pro Ser Leu Ser Ser Ser Gly 1105 1110 1115 1120		
Leu Ala Leu Thr Ser Arg Pro Asp Gln Val Ser Gln Val Ser Gly Glu 1125 1130 1135		
Gln Leu Lys Gly Ser Gly Ala Thr Pro Pro Gly Ala Pro Pro Glu Met 1140 1145 1150		
Glu Pro Ser Ser Gly Asn Ser Gly Pro Lys Gln Val Ala Pro Val Leu 1155 1160 1165		
Leu Thr Arg Arg Arg Asn Asn Leu Asp Asn Ser Trp Ala Ser Lys Lys 1170 1175 1180		
Met Ala Ala Thr Arg Pro Leu Ala Gly Leu Gln Lys Ala Gln Ser Val 1185 1190 1195 1200		
His Ser Leu Val Pro Gln Asp Glu Val Pro Ser Ser Arg Pro Leu Leu 1205 1210 1215		
Phe Arg Glu Ala Glu Thr Gln Gly Ser Leu Gly Ser Leu Pro Gln Ala 1220 1225 1230		
Gly Gly Cys Ser Ser Gln Pro His Ser Tyr Gln Asn His Thr Thr Ser 1235 1240 1245		
Ser Met Ala Lys Leu Ala Arg Ser Ile Ser Val Gly Glu Asn Pro Gly 1250 1255 1260		
Leu Ala Thr Glu Pro Gln Ala Pro Ala Pro Ile Arg Ile Ser Pro Phe 1265 1270 1275 1280		
Asn Lys Leu Ala Leu Pro Ser Arg Ala His Leu Val Leu Asp Ile Pro 1285 1290 1295		
Lys Pro Leu Pro Asp Arg Pro Thr Leu Thr Thr Phe Ser Pro Val Ser 1300 1305 1310		
Lys Gly Leu Thr His Asn Glu Thr Glu Gln Ser Gly Pro Leu Arg Glu 1315 1320 1325		
Pro Arg Lys Ala His Thr Thr Val Glu Lys His Ser Cys Leu Gly Glu		

1330 1335 1340
 Gly Thr Thr His Lys Ser Arg Thr Glu Cys Gln Ala Tyr Pro Gly Pro
 1345 1350 1355 1360
 Asn His Pro Cys Arg Gln Gln Leu Pro Val Asn Asn Leu Leu Gln Ala
 1365 1370 1375
 Glu Ser Leu Gln Pro Leu Ser Pro Glu Lys Thr Arg Asn Pro Val Glu
 1380 1385 1390
 Ser Ser Arg Pro Gly Val Ala Leu Ser Gln Asp Ser Glu Leu Ala Leu
 1395 1400 1405
 Ser Leu Gln Gln Cys Glu Gln Leu Val Ala Glu Leu Gln Gly Asn Val
 1410 1415 1420
 Arg Gln Ala Val Glu Leu Tyr Arg Ala Val Thr Ser Cys Lys Thr Pro
 1425 1430 1435 1440
 Ser Ala Glu Gln Ser His Ile Thr Arg Leu Leu Arg Asp Thr Phe Ser
 1445 1450 1455
 Pro Val Arg Gln Glu Leu Glu Val Leu Ala Gly Ala Val Leu Ser Ser
 1460 1465 1470
 Pro Gly Gly Ser Pro Gly Ala Val Ala Ala Glu Gln Thr Gln Ala Leu
 1475 1480 1485
 Leu Glu Gln Tyr Ser Glu Leu Leu Leu Arg Ala Val Glu Arg Arg Met
 1490 1495 1500
 Glu Arg Arg Leu
 1505

<210> 15
 <211> 244
 <212> PRT
 <213> Mouse

<400> 15
 Ser Ser Lys Tyr Ser Asn Glu Ser Arg Ser Gln Ala Asp Ser Gly Phe
 1 5 10 15
 Leu Gly Leu Arg Pro Thr Ser Val Asp Pro Ala Leu Arg Arg Arg Arg
 20 25 30
 Arg Gly Pro Arg Asn Lys Lys Arg Gly Trp Arg Arg Leu Ala Glu Glu
 35 40 45
 Pro Leu Gly Leu Glu Val Asp Gln Phe Leu Glu Asp Val Arg Leu Gln
 50 55 60
 Glu Arg Thr Thr Gly Gly Leu Leu Ala Glu Ala Pro Asn Glu Lys Leu
 65 70 75 80
 Phe Phe Val Asp Thr Gly Phe Lys Arg Lys Glu Pro Arg Lys Lys Arg
 85 90 95

Thr Leu Val Gln Lys Lys Ser Gln Arg Leu Gln Lys Pro Leu Arg Val
 100 105 110
 Asp Leu Ala Leu Glu Asn His Ser Lys Ile Pro Ala Pro Lys Asp Ile
 115 120 125
 Leu Ala His Gln Val Pro Asn Ala Lys Lys Leu Arg Arg Lys Glu Glu
 130 135 140
 Leu Trp Glu Lys Leu Ala Lys Gln Gly Glu Leu Pro Arg Asp Val Arg
 145 150 155 160
 Lys Ala Gln Ala Arg Leu Leu Ser Pro Pro Thr Pro Lys Ala Lys Pro
 165 170 175
 Gly Pro Gln Asp Ile Ile Glu Arg Pro Phe Tyr Asp Leu Trp Asn Pro
 180 185 190
 Asp Asn Pro Leu Asp Thr Pro Leu Ile Gly Gln Asp Ala Phe Phe Leu
 195 200 205
 Glu Gln Thr Lys Lys Lys Gly Val Arg Arg Pro Gln Arg Leu His Ile
 210 215 220
 Lys Pro Ser Gln Val Pro Ala Val Glu Val Ile Pro Ala Gly Ala Ser
 225 230 235 240
 Tyr Asn Pro Thr

<210> 16
 <211> 484
 <212> PRT
 <213> Mouse

<400> 16
 Met Ala Ala Gly Gly Asn Arg Asp Gly Glu Lys Arg Gly Ser Arg Ser
 1 5 10 15
 Gln Ala Asp Ser Gly Phe Leu Gly Leu Arg Pro Thr Ser Val Asp Pro
 20 25 30
 Ala Leu Arg Arg Arg Arg Arg Gly Pro Arg Asn Lys Lys Arg Gly Trp
 35 40 45
 Arg Arg Leu Ala Glu Glu Pro Leu Gly Leu Glu Val Asp Gln Phe Leu
 50 55 60
 Glu Asp Val Arg Leu Gln Glu Arg Thr Thr Gly Gly Leu Leu Ala Glu
 65 70 75 80
 Ala Pro Asn Glu Lys Leu Phe Phe Val Asp Thr Gly Phe Lys Arg Lys
 85 90 95
 Glu Pro Arg Lys Lys Arg Thr Leu Val Gln Lys Lys Ser Gln Arg Leu
 100 105 110
 Gln Lys Pro Leu Arg Val Asp Leu Ala Leu Glu Asn His Ser Lys Ile
 115 120 125

Pro Ala Pro Lys Asp Ile Leu Ala His Gln Val Pro Asn Ala Lys Lys
 130 135 140
 Leu Arg Arg Lys Glu Glu Leu Trp Glu Lys Leu Ala Lys Gln Gly Glu
 145 150 155 160
 Leu Pro Arg Asp Val Arg Lys Ala Gln Ala Arg Leu Leu Ser Pro Pro
 165 170 175
 Thr Pro Lys Ala Lys Pro Gly Pro Gln Asp Ile Ile Glu Arg Pro Phe
 180 185 190
 Tyr Asp Leu Trp Asn Pro Asp Asn Pro Leu Asp Thr Pro Leu Ile Gly
 195 200 205
 Gln Asp Ala Phe Phe Leu Glu Gln Thr Lys Lys Lys Gly Val Arg Arg
 210 215 220
 Pro Gln Arg Leu His Ile Lys Pro Ser Gln Val Pro Ala Val Glu Val
 225 230 235 240
 Ile Pro Ala Gly Ala Ser Tyr Asn Pro Thr Phe Glu Asp His Gln Ala
 245 250 255
 Leu Leu Arg Glu Ala His Glu Val Glu Leu Gln Arg Glu Lys Glu Ala
 260 265 270
 Glu Lys Leu Glu Arg Gln Leu Ala Leu Pro Thr Ser Glu Gln Ala Ala
 275 280 285
 Thr Gln Glu Ser Val Phe Arg Glu Met Cys Glu Gly Leu Leu Glu Glu
 290 295 300
 Ser Asp Gly Glu Asp Glu His Glu Ala Gly Arg Ala Gly Gln Pro Glu
 305 310 315 320
 Ala Gly Asp Gly Thr Thr Glu Ile Ser Pro Thr Gly Ala Ala Gly Pro
 325 330 335
 Glu Lys Arg Met Glu Lys Lys Thr Glu Gln Gln Arg Arg Arg Glu Lys
 340 345 350
 Ala Ala Arg Lys Leu Arg Val Gln Gln Ala Ala Leu Arg Ala Ala Arg
 355 360 365
 Leu Gln His Gln Glu Leu Phe Arg Leu Arg Gly Ile Lys Ala Gln Val
 370 375 380
 Ala Arg Arg Leu Ala Glu Leu Ala Arg Arg Arg Glu Gln Arg Arg Ile
 385 390 395 400
 Arg Arg Leu Ala Glu Ala Asp Lys Pro Arg Arg Leu Gly Arg Leu Lys
 405 410 415
 Tyr Gln Ala Pro Asp Ile Asp Val Gln Leu Ser Ser Glu Leu Ser Gly
 420 425 430
 Ser Leu Arg Thr Leu Lys Pro Glu Gly His Ile Leu Arg Asp Arg Phe
 435 440 445

Lys Ser Phe Gln Lys Arg Asn Met Ile Glu Pro Arg Glu Arg Ala Lys
450 455 460

Phe Lys Arg Lys Tyr Lys Val Lys Leu Val Glu Lys Arg Ala Tyr Arg
465 470 475 480

Glu Ile Gln Leu

<210> 17

<211> 27

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 17

tagatatcgc cttggaacaa gagaaga 27

<210> 18

<211> 31

<212> DNA

<213> Artificial Sequence

<220>

<223> Description of Artificial Sequence:Synthetic DNA

<400> 18

atgaattctc agttgttctt tgtgacactg a 31